

Statement of
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The National Aeronautics and Space Administration
before the
Subcommittee on Space and Aeronautics
House Science, Space & Technology

I want to thank you for the opportunity to discuss America's next, great exploration initiative - the Artemis program. In a matter of weeks, NASA will launch Artemis I. This is the first in a series of increasingly complex missions that will demonstrate the nation's commitment and capability to extend human presence to the Moon and beyond. To be clear, NASA's long-term goal is to send humans to Mars – and we will use the Moon to help us get there.

We could not have gotten here without the steadfast, bipartisan support of Congress. Starting with the NASA Authorization Act of 2010 and followed by the NASA Transition Authorization Act of 2017, Congress established a clear vision for NASA to extend human presence beyond low-Earth orbit. The legislation directed the development of the Space Launch System (SLS) - the most powerful rocket NASA has ever built, the Orion spacecraft, capable of carrying four astronauts to deep space, and the Exploration Ground Systems (EGS) Program, which develops and operates the ground systems and software needed to launch and operate the rocket and spacecraft. Along with the Human Lander System (HLS) now undergoing development, these are the backbone of the Artemis campaign and they will carry humans further into space than ever before. It's thrilling to stand in the Vehicle Assembly Building at the Kennedy Space Center and see this rocket and spacecraft transformed from legislation to real hardware, about to embark upon their maiden voyage to the Moon. Soon the entire vehicle will be rolled out to the pad in preparation for the Artemis I mission, currently slated for March 2022.

Following this year's un-crewed Artemis I test flight, NASA will conduct a crewed test flight around the Moon in Spring of 2024. No earlier than 2025, NASA will launch Artemis III, which will return U.S. astronauts to the surface of the Moon.

On the Artemis III mission, astronauts will leave Orion and board the HLS, which will deliver two crew members to the surface of the Moon. The next generation of moonwalkers will be much more diverse as NASA's Artemis program will land the first woman and the first person of color on the Moon. Last year, NASA selected SpaceX to build a lunar lander for this mission. That award was for one un-crewed and one crewed demonstration mission, and NASA plans to land on the Moon many times. To achieve landings beyond Artemis III, NASA intends to initiate a competitive, fixed-price, milestone-based procurement for crewed lunar surface transportation services that will provide human access to the lunar surface on a regularly recurring basis beyond the initial crewed demonstration mission.

NASA is also developing the Gateway, a lunar space station that will serve as an orbital platform supporting future human and robotic missions to the lunar surface. The Gateway will also support unique research and technology efforts in orbit. Development and production of the Gateway's first two components—the Power and Propulsion Element and the Habitation and Logistics Outpost—are underway and managing to a notional launch date of 2024. These initial elements of the Gateway outpost will be launched together into orbit around the Moon where they will provide critical support in human-class lander deployments and operations enabling lunar surface activities. The Gateway is also a demonstration of NASA's commitment to international cooperation in the Artemis program. We are extending our international partnerships from low-Earth orbit to the Gateway and will continue to do so on the surface of the Moon. Artemis will present new opportunities to deepen and broaden the international Artemis coalition.

In order for our astronauts to work on and explore the surface of the Moon, they will need a new generation of spacesuits to enable capabilities that go beyond what was accomplished in the Apollo era. NASA has begun to work with the commercial space industry to obtain new space suits. Under this new program, NASA will continue to leverage its expertise on spacewalk systems, space suits and operational concepts. The NASA workforce remains critical to the success of future spacesuit programs and will provide data and insights from NASA designs and development to companies for use in their own concepts.

In addition to our human exploration initiatives, NASA will send dozens of robotic science investigations and technology experiments to the surface of the Moon through the Science Mission Directorate's Commercial Lunar Payload Services (CLPS) initiative. Some of these missions may help us find resources, such as water, and potentially extract those resources on the Moon. CLPS flights will leverage the capabilities of America's aerospace industry to quickly and affordably deliver scientific instruments and technology demonstrations to the Moon. CLPS is another example of NASA leaning forward on experimenting with innovative contracting mechanisms that leverage the private sector to provide NASA with greater value. NASA currently has 14 providers on contract to bid for CLPS deliveries for the Agency and has already contracted for seven lunar surface deliveries through 2024. The first three lunar landers are expected to deliver payloads to the Moon this year.

Building upon the work done by the Apollo missions, NASA will work to make this exploration effort more sustainable with help of newer technologies as well as innovative commercial and international partnerships, all while advancing principles for peaceful and sustainable space

exploration through the Artemis Accords. Through Artemis, NASA will continue to be at the forefront of humanity's quest for knowledge. NASA plans to send more robots and humans to study more of the Moon than ever before, where we will learn how to live far away from Earth for longer periods of time. We will make new scientific discoveries and gain a better understanding of how much water and other resources are available on the Moon to help build the first long-term presence on the Moon. As much as possible, our technologies and operations will be designed for use on both the Moon and Mars – all supporting our long-term goal of sending the first astronauts to the Red Planet.

Congressional support has been, and will continue to be, critical for NASA to succeed. America's lunar investments create jobs and lead to scientific discoveries and advancements in a variety of new research and technologies that benefit both our work in deep space and our home planet. Our lunar activities will showcase – to the American taxpayer and the global community – a fast-paced and exciting space program, which will not only inspire the young generation but also provide soft-power, national security and competitiveness benefits. There are significant and lasting geopolitical advantages to the United States being on and around the Moon in a sustainable way that fully leverages commercial innovation and matures our processes and technologies to bring the human exploration of Mars within reach.

Every bit of work that I have mentioned is possible because of the people of NASA and our private sector partners. Our people have delivered despite COVID which includes losing some of our teammates because of the virus. They have come to work while their homes were damaged and without power due to storms. They have come with the spirit of exploration that has and will always be as tangible as the hardware. I am grateful to be able to represent them here.

Thank you for the first of what I hope to be numerous interactions to help explain our plans; how we can continue to work together; and, most importantly, share our progress taking humanity further into the solar system.